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ABSTRACT

This report contains the findings of five specific hypotheses which were tested concerning the relationship of sex of teacher, sex of child, and extent of father presence to academic achievement. Residual change scores in mathematics, reading, and language were subjected to regression analyses and three-way analyses of variance. The subjects in the study were 201 girls and 215 boys in the fourth and fifth grade classrooms of 14 male and 14 female teachers. The measures of extent of father presence-absence came from mothers' responses to a father activity inventory. The analyses generally indicated that none of the independent variables were related to the achievement scores. The report states that future research should consider intervention at an earlier age, quality of father presence, teacher quality, and developmental sex differences. (WS/Author)

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Final Report

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THE RELATIONSHIP OF SEX OF TEACHER AND FATHER
PRESENCE-ABSENCE TO ACADEMIC ACHIEVEMENT

August, 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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Abstract

Boys' academic achievement problems in the elementary years have been attributed by some to the feminization of the classroom. However, research has not indicated that boys do better under male teachers. Because father absence is related to academic underachievement in both sexes and to lack of appropriate sex role identity which in turn is related to underachievement, father-absent children in particular may benefit from having male teachers. To test five specific hypotheses concerning the relationship of sex of teacher, sex of child, and extent of father presence to academic achievement, residual change scores in mathematics, reading, and language were subjected to regression analyses and three-way analyses of variance. The subjects in the study were 201 girls and 215 boys in the fourth- and fifth-grade classrooms of 14 male and 14 female teachers. The measures of extent of father presence-absence came from mothers' responses to a father activity inventory. The analyses generally indicated that none of the independent variables were related to the achievement scores. Future research should consider intervention at an earlier age, quality of father presence, teacher quality, and developmental sex differences, an alternative explanation of academic achievement problems of boys.

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Presence-Absence to Academic Achievement

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Institute for Juvenile Research

Chicago, Illinois

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CHAPTER I

INTRODUCTION AND STATEMENT OF PROBLEM

Why do boys have a disproportionate number of academic achievement problems in the elementary grades? Ratios of at least four male problems to every one female problem have commonly been reported. The popular and educational presses have generally cited two reasons for these problems. One, boys develop physically and mentally more slowly than girls. The result is an inability to perform as well as girls in the early grades. Not being able to perform as expected in these early years seems to get boys off to a bad start and as the years go by, their problems seem to multiply rather than diminish.

This study is concerned with a second attributed cause, feminization of the schools. It is often asserted that the elementary school program meets the needs of girls, but not boys. Several investigators have reported that the classroom is perceived as feminine by students and that girls are perceived to be favored. Bruno Bettelheim suggested that boys are defeated in coeducational instruction (Noon, 1969).

The feminization of the schools as a cause of boys' disproportionate number of academic achievement problems was proposed by Ayres as long ago as 1909. At that time he suggested that the schools seem more suited to the needs of girls due to the excessive number of female teachers in

the schools. However, since there were no male teachers in the elementary schools, there was no basis for comparing the effects of sex of teacher at that time. Ayres recognized the need for relevant research. Yet to this day relevant research has been sparse, partly due to the fact that there are still few male teachers in the elementary schools.

The lack of research has not daunted the advocates of masculinizing the elementary schools, however. Eighty-nine per cent of the educators in a study by Kaplan (1948) felt that male teachers were needed in the elementary schools.

The advantages of more male teachers in the elementary classroom as cited by Baldauf (1963) and Grambs and Waetjen (1966) are typical of those cited by others. One, the man provides a model to be recognized and differentiated from that provided by mother and female teachers. Male teachers can help clarify the male sex role which has become fuzzy with female teachers providing the only model in the schools. Two, the types of intellectual activity and academic interests exhibited and encouraged by men would benefit the learning process of girls as well as boys.

It has often been stated that the schools are insensitive to the needs and temperaments of most boys. Women's rules and standards prevail. These conditions for learning in school are thought to be in opposition to the

masculine culture which exists outside the school. Female teachers have also been accused of neglecting mathematics and science subjects in which boys can excel. Rather they stress verbal and language subjects which are thought to be more related to characteristics of the female sex role.

The problems of boys seem to be prevalent in some academic areas more than others. For instance, boys generally do more poorly in areas requiring verbal skills than in areas involving mathematical, analytical, and spatial skills. During the preschool and early grade school years, girls exceed boys in most aspects of verbal behavior. But during these years, boys and girls do not seem to differ in arithmetical computation, although some studies have shown that boys begin to get better than girls in arithmetical reasoning.

Of six studies comparing the effects of male and female teachers on academic achievement located by this investigator, only two have reported that male teachers have had what may be considered a favorable influence on boys. The other four studies did not find that male teachers solved the problem of male underachievement. Many aspects of these six research studies have varied so it is difficult to make any conclusive statements about the effects of male teachers in the classroom. The grade levels studied in these six studies have differed, the amount of time the male teachers were involved with the

students varied, and the dependent variables were rarely comparable.

In spite of any overwhelming research evidence at the moment for a concerted effort to put more male teachers in the elementary classroom as a panacea for the academic problems of boys, there are a number of theoretical reasons for believing that more male teachers might be beneficial in the ways proposed. The rationale for including more male teachers in the elementary classroom is based not only upon the feminization of the classroom but also upon the supposed lack of adequate male models in the home. In today's urban society, particularly, father spends a great deal of time away from home, at work and commuting to and from work. When he is at home, he is often tired and not in the mood to be with his children. Sexton (1969) has suggested that fathers also have abdicated their authority to mother. To her, this means that boys do not have the appropriate, aggressive model to emulate. It is proposed that male teachers could be seen as father substitutes for both boys and girls who experience father absence. Male teachers would serve to counterbalance the overly feminine environment in which many children find themselves. As a result, boys would do better in school, both academically and behaviorally.

Some research has indicated that father absence leads to lower academic achievement by girls as well as

boys. Father absence has also found to be related to deficits in appropriate sex role development in both boys and girls. In turn, deficits in sex role development have been found to be related to academic achievement problems.

Whether these deficits are due to the lack of father as a model or as a reciprocal model, or are due to lack of his purported proficiency as opposed to mother's in differentiating sex role, depends upon one's theoretical orientations of sex role development. Theories in which imitation and modeling are central would suggest that the father would be of particular importance for boys. Girls would not experience the same degree of deficit because mother is her primary model. Lack of father as a reciprocal model is considered in these theories of some importance to her appropriate role development, however. Differential reinforcement theories, on the other hand, which generally stress the father as the primary sex-role socializer, would predict that father's presence would be of great benefit to both boys and girls.

In any case, no matter what theory of sex role development one adheres to, father seems to be of some importance for the development of both boys and girls. Theoretically, it would seem that a father substitute in the form of a male teacher in the elementary classroom could conceivably promote the development of appropriate sex role identity for both boys and girls, particularly

those who experience father absence. His role in the development of appropriate sex role behavior of his students would be expected to result in their improved academic achievement. Since boys have more problems in academic achievement, it is they who might be expected to benefit most of all. Energy that might have been spent in solving identity problems can be directed toward achieving in the classroom.

Summary of the Problem

Elementary school boys experience an inordinate number of academic problems as compared to girls. It has been commonly proposed that more male teachers in the classroom would help reduce the differences in academic achievement between boys and girls. However, there is little direct research evidenced to date that would support the adequacy of this prescription.

Indirect research evidence involving the interrelationships of father absence, sex-role-identity development, and academic achievement, however, has suggested that male teachers in the elementary classroom might be beneficial academically for boys, and perhaps girls, who experience father absence.

Hypothesis

The purpose of this study was to examine evidence concerning the interrelationships of sex of teacher, sex of child, and father presence-absence to academic

achievement. The following specific hypotheses were tested:

I. The more father absence, the higher the mathematics change scores of boys and girls with male teachers.

II. The more father absence, the higher the reading change scores of boys with male teachers.

III. The more father absence, the higher the language change scores of boys with male teachers.

IV. The more male presence experienced by boys and girls, the higher the mathematics scores.

V. The more male presence, the less high reading scores are dependent upon sex of child.

CHAPTER II

REVIEW OF THE LITERATURE

Extent of the Problem

Ratios of four or more male underachievers to one female underachiever have commonly been reported (Kingness, 1967; Teigland, Winkler, Mungar, & Kranzler, 1966). This finding may be reflected in the report of Waetjen and Grambs (1963). They found that girls described themselves more favorably than boys. A recent report indicated that 63% of the school dropouts in New York City are boys (Lavin, 1965). That same report found that underachievement starts in the sixth grade for girls but as early as first grade for boys. Peltier (1968) and Bentzen (1966) have both found that about two-thirds of all grade repeaters are boys. Schaeffer (1969) found that male sixth grade teachers perceived boys to have more achievement and social relations problems than did female sixth grade teachers. However, the teachers did not differ in their beliefs about the number of problems girls have. They also ranked 66 problems in a similar order for both sexes. So it appears that although boys and girls have the same problems in school, boys have more of them.

In addition to boys' having more social and academic problems in the classroom, there are some measured sex differences in intellectual ability during the elementary years which favor girls. Because intelligence tests have

been constructed to show no sex differences in general intelligence, that has generally been found to be the case (Maccoby, 1966; Miele, 1958). Sex differences that do occur are among the subtests making up general intelligence and among subtests of academic achievement tests such as the Stanford Achievement Tests and the California Achievement Tests.

There is a small but consistent difference in favor of girls on most verbal tasks of all types, including reading (Maccoby & Rau, 1962). When the Gates Reading Survey Tests were administered to over 6,000 children in grades 3 to 5, it was found that girls generally scored higher than boys (Clark, 1962). It was also reported that girls were superior in reading and spelling as determined by teacher grades. Maccoby (1966) has reported that by age 10, however, boys have caught up with girls in reading.

Boys are generally thought to be capable of better proficiency in mathematics than girls, but the research findings regarding sex differences in this ability in the elementary school years have not been that clear-cut. Parsley, Powell, O'Connor, and Deutsch (1963) found that boys were better than girls in arithmetic reasoning, but not arithmetic fundamentals. And boys were not as superior to girls as girls were to boys in reading.

With regard to the mechanics of arithmetic, Maccoby and Rau (1962) reported that of 10 studies reviewed, three

showed boys were significantly better but that there were no sex differences in the remaining seven studies. In numerical skills, there appeared to be no sex differences. Of 11 studies reviewed, there were no differences reported in eight studies. None of the 10 studies on arithmetic computation reviewed showed girls to be superior. Boys were favored in three and no differences were reported in seven of the studies.

It must be pointed out that the sex differences in academic achievement reported were average differences and that certainly many boys do equally well as the average girl or even better. Wozenraft (1963) administered the Stanford Achievement Tests to third and sixth graders who were divided into high, medium, and low probable learning rate groups. In the high group, there were generally no sex differences on any of the subtests. In the low and medium groups, girls did better in reading and three arithmetic subtests, even though they were generally younger. Across the probable learning rate groups, there were more sex differences in the third than in the sixth grade.

Frequently the above sex differences were generally favorable to girls and the reason for the underachievement problems of boys has been attributed to the feminization of the classroom (Ayres, 1909; Baldauf, 1963; Flaherty & Anderson, 1966; Grambs & Waetjen, 1966; McCandless, 1967; Ostrovsky, 1959; Schuell, 1948; Sexton, 1965, 1968, 1969,

1970). One might say that it is no wonder that the classrooms of the elementary school are feminized when it is realized that 87% of the teachers in these classrooms are female (Eisdenkapp & Goering, 1971; Sexton, 1970).

Sexton is one of the more prolific writers concerning the harmful effects of too many female teachers in the elementary classroom. She is very vocal in her claim that the elementary schools are too womanly, i.e., the content of the schools is too feminine, and male virtues are not rewarded in the school learning process. She believes that the words used in the classroom are too feminine, remote from physical things and the rough realities of life (Sexton, 1970). If boys resist absorbing feminine school values, they are pushed toward rebellion and school failure. Over 20 years ago, Schnell (1948) also believed that the school was set up to make progress easier and more rewarding for girls. More recently, Brewton (1969) reported findings that suggest that boys' inferiority may be due to learned factors which are sex-typed rather than biological differences.

Lavin (1965) speculated that female teachers' definition of a student's role includes more characteristics of the female sex role than of the male sex role. It is hypothesized that girls are more passive, willing to follow directions, sensitive to human relations, and are also permitted to express emotions; therefore they are more suited

to the female teacher's teaching methods. It is believed that the female teachers ask questions in class that favor girls' ways of thinking and that girls' verbal facility enables them to make better use of the learning materials provided (Hanson, 1959; Peltier, 1968; Waetjen, 1962; Waetjen & Grambs, 1963; Winker, 1949).

Sexton (1970) suggested that if the male norms of courage, inner direction, certain forms of aggression, autonomy, success in technological skills, group solidarity, adventure, and the like were stressed in the classroom, boys would not experience nearly so many problems in school. Boys have higher metabolic rates than girls, but the resulting behavior is viewed as disruptive in the classroom. Thus, since boys are not permitted to express themselves in the classroom in ways suitable to their nature, the restriction is interpreted as inhibiting their learning facility (Peltier, 1968).

Sexton (1969) believed that boys in school are the objects of women's resentment of male privileges. She reported that female teachers gave better marks to girls than boys. On standardized tests, the boys and girls did equally well, however, and Arnold (1968) found that girls received better marks from both male and female teachers.

The above investigators have implied that sex differences in academic achievement are due to nurture rather than nature. Broverman, Klaiber, Kobayashi, and Vogel

(1969) are of the opinion that there is no supporting evidence for sex differences in physiology that lead to sex differences in cognitive ability. Male teachers are expected to provide a different nurture than female teachers that is more suitable for stimulating the general academic achievement of boys, and perhaps that of girls in certain academic areas.

There is evidence that teachers treat boys and girls differently in school, but few general conclusions about the effects of these different treatments, particularly on academic achievement, can be drawn. Arnold (1968), Meyer and Thompson (1966), and Slobodian and Campbell (1967) have concluded that boys received more negative comments from teachers than did girls. But even in the cases where boys had less opportunity to read, there were no sex differences in reading achievement on standardized tests. Meyer and Thompson also found that boys and girls received equal amounts of approval in the classroom. Felsenthal (1969) found that female teachers interacted both more positively and negatively with boys than girls in first grade, yet girls' reading scores were significantly higher. It is interesting that the boys in his study were older. Hull (1970) found that both sixth grade boys and girls perceived male teachers as more psychologically rewarding than female teachers. When IQ was held constant, there were no sex differences in overall achievement under male and female teachers, however.

Research by Kagan (1964) revealed that second and third grade girls are more likely than boys to perceive school objects as feminine. It has been suggested that this phenomenon facilitates the school performance of girls. Davidson and Lang (1960), Lippitt and Gold (1959), Spaulding (1963), and Torrance (1962) reported that girls perceived their teachers to be more favorable to them than did boys. Children's perceptions of their teachers' feelings toward them correlated positively with self-perceptions and achievement. Stein and Smithells (1969) found that second, sixth, and twelfth graders considered reading, artistic and social skills, feminine; mathematics, athletics, spatial and mechanical skills were viewed as masculine. The older the child, the more were the skills sex differentiated. Stein (1971) suggested that children set sex role standards for the achievement areas. These areas thus acquire different attainment values and boys and girls do well in subjects that have value for them. Clark (1967) reported just such a finding. Girls perceived themselves as good in reading and spelling but not in mathematics as culturally expected.

Three studies have reported that there is no evidence that female teachers "feminize" the schools (Davis & Slobodian, 1967; Fagot & Patterson, 1969; Good & Brophy, in press). Fagot and Patterson reported that although female teachers of three-year-olds reinforced feminine behavior

for both boys and girls, no observable changes in appropriate sex-typed behavior were found. Even though boys were reinforced for opposite sex behavior, peers reinforced the correct behavior.

In summary, although it is commonly reported that boys have as many as four academic problems for every one of girls, a review of the research evidence has given no clear indication of just where the problems are. Boys are somewhat behind girls verbally until the age of ten, the age of the subjects in this study. With regard to mathematics, boys seem capable of doing somewhat better than girls in certain areas. In many areas, there appear to be no differences. This conclusion has been drawn from data for boys and girls who for the most part have learned mathematics from a female teacher. Critics of female teachers have suggested that girls could do as well as boys in mathematics and that both could do better under male teachers.

Effects of Sex of Teacher

An increase in the number of male teachers in the elementary classroom as a cure for the academic achievement problems of males has been proposed loud and long (Ayres, 1909; Baldauf, 1963; Davidson & Lang, 1960; Grambs & Waetjen, 1966; Hewitt, 1931; McCandless, 1967; McFarland, 1969; Ostrovsky, 1959; Peltier, 1968; Sexton, 1965, 1968, 1969, 1970; Smith, 1970). Findings of earlier studies of

the different effects of male and female teachers have been inconsistent, however. Smith (1970) and Shinedling and Pedersen (1970) found male teachers to have some positive effects on academic achievement. Asher and Gottman (1972), Bennett (1966), Brophy and Loebe (1971), Clapp (1963), Lahaderne and Cohen (1972), McFarland (1963), and Steele (1968) reported no sex effects.

Smith (1970) found that fifth grade boys with male teachers had better posttest scores in mathematics problem solving than did boys with female teachers. On the pretest the two groups did not differ. There were no positive effects of male teachers on mathematics computation or science, however. To the present reviewer the size of the differences in scores that were significant would appear to be of little practical value.

Fourth grade boys have been found to do better on quantitative materials as determined by California Achievement Test scores under male teachers than female teachers but worse than other subjects on verbal materials (Shinedling & Pedersen, 1970). The boys studied under one of eight male teachers. The investigators suggested that perhaps stereotypical sex role expectancies were operating. Peltier (1968) has also stated a similar hypothesis.

Clapp (1967) did not find that teacher sex had any effects on "true" achievement gains. Nor were attitudes about school and the classroom affected differently by

male and female teachers. Clapp included about 25 of each sex teacher and 496 fifth grade boys in his study. Brophy and Laosa (1971) based their conclusion of no sex of teacher effect on mental ability patterns from the performance of students during two years in the classroom of one male and two female teachers.

Neither Steele (1968) nor McFarland (1966) found that sex of teacher had any effects on reading achievement. However, the fourth grade boys in the study by Steele had more appropriate sex role preferences and higher teacher-pupil identification under male teachers ($N=30$). In the McFarland study, males and females differentially served only as participants in the instructions of first graders during a school year. Neither mathematics nor reading achievement, nor identification with the participant was differentially affected.

When Bennett (1966) compared the Stanford Achievement Test scores of fifth grade boys and girls having either male or female teachers, it was found that girls with female teachers performed best of all. Boys also performed better under female than male teachers.

Several studies in situations more controlled than the classroom have suggested that a like-sex instructor might aid the learning process. Ofstad (1968) observed that in the learning of a bowling task, children more often imitated the like-sex model. Motor behavior was more often

imitated than verbal behavior. Pedersen, Shinedling, and Johnson (1968) also found that third grade boys and girls achieved higher WISC Arithmetic scores under like-sex examiners. Disregarding sex of student, however, female examiners elicited higher scores. Rosenblith (1959) reported that both sexes of kindergarten children imitated a male experimenter more often than a female experimenter. Bittner and Shinedling (1968) found that male examiners elicited better performance from both third grade boys and girls on a conservation task of Piaget. The cross-sex experimenter was a more effective giver of social reinforcement for a learning task in which six-year-olds were the subjects (Odom, 1966).

In both of the Rosenblith and Odom studies, however, only one experimenter of both sexes participated in the experiment so it may be that the personal characteristics of the experimenter rather than the sex of the experimenter is responsible for the differential sex effects.

Although there is little direct research evidence that suggests that boys would improve in academic achievement if they had male teachers in the classroom, there are several related lines of research which could be construed to support the general opinion that more males in the elementary classroom would be beneficial. This research is reviewed in the following sections.

Father Absence and Academic Achievement

Father absence and lack of father participation in child rearing have been found to lead to lower academic achievement in both boys and girls (Richard & Biller, 1971; Brofenbrenner, 1967; Porter & Fleming, 1968; Deutsch, 1960; Deutsch & Brown, 1964; Leithington & Deur, 1971; Kuckenberg, 1967; Ladd, Leithington, & Sutton-Smith, 1967; Lessing, Wagerin, & Nelson, 1971; Maxwell, 1961; Ostrovsky, 1959; Rees & Palmer, 1970; Shelton, 1969; Sutherland, 1930; Sutton-Smith, Rosenbaum, & Ladd, 1968; Verdiani, 1971).

Sutton-Smith et al. (1968) pointed out that because of the generally negative effects of father absence on identification and concurrent adjustment difficulties, it might be expected that father absence would have a negative effect on the cognitive abilities of both boys and girls. Among college students, they found that father-present boys had higher quantitative, language, and total ACE scores than father-absent boys. Father-present girls only had higher quantitative scores. They concluded that the father-absent boy generally suffered more academically. Rees and Palmer (1970) supported this conclusion and suggested that girls' intellectual abilities are less influenced by environmental factors such as father absence. Shelton (1969), on the other hand, found that one-parent boys did better academically than one-parent girls.

When Landy et al. (1969) studied the ACE quantitative scores of college girls, they found significantly higher scores for girls from father-present homes than from father-totally-absent homes. Partial absence such as shift work did not effect scores differentially.

Lessing et al. (1970) found that the main effects of father absence (two not necessarily consecutive years of absence) were on Performance IQ, regardless of sex and social class. In their study, father absence also had a negative effect on the arithmetic scores of boys, but it did not affect the other subtests in which boys excelled. Cortes and Fleming (1968) not only found culturally disadvantaged father-absent boys to be underachievers in arithmetic, but also found them to be more depressed, insecure, immature, unstable, irritable, and impulsive than father-present boys.

Carlsmith (1964), Levy (1943), and Nelsen and Maccoby (1966) all have reported that father absence seems to be related to a feminine patterning of aptitude test scores. Carlsmith found that boys whose fathers were absent before the age of five had lower mathematics scores than verbal scores on the College Entrance Examinations Board tests. The two scores were reversed for father-present boys. In absolute terms, it appeared that father-absent and father-present boys had equal verbal scores, but that the father-absent boys were lower in mathematics.

Sutton-Smith et al. (1968) qualified their findings of the negative effects of father absence by saying that the period of father absence seemed to be important also. In their study, father absence during years 0 to 4 and 5 to 9 had the greatest effect on college girls' ACE scores. Kelly, North, and Zingle (1965) found that if the home was broken in grades one to three, sixth grade reading was adversely affected. Shelton (1969) reported similar findings. This effect was not present, however, if the home was broken prior to school or in grades four to six. Hetherington and Deur (1971), on the other hand, reported that father-absence effects seem to be most severe if he leaves during the preschool years. Kuckenberg (1963), found that mathematical aptitudes were especially low when father left before his son's birth and was away as long as two to three years.

Blanchard and Biller (1971) reported that high father-present, white, third-grade boys had Stanford Achievement Test scores and teacher grades superior to early father-absent boys (after five years) and low father-present boys (six hours a week as opposed to two hours or more daily). The early father-absent boys were clearly the underachievers.

A review by Biller (1970) suggested that the amount and quality of presence as well as amount and period of absence effects the relationship between father absence and academic achievement. Ostrovsky (1959) in summarizing

eight case studies noted that as father's direct influence diminished, children's concepts became distorted and they lost freedom of expression. Radin (1972) reported a significant positive correlation between the IQ of four-year-old white boys and observed paternal nurturance. Correlations of about .50 were reported. Verdiani (1971) found that a high frequency of father participation in child rearing activities of a cognitive nature was positively associated with fifth- and sixth-graders' achievement in mathematics. Mussen, Young, and Gaddini (1963) reported that father-present boys who received insufficient father affection had weak achievement needs. Finally, Vernon (1965) reported cross-cultural evidence suggesting among other things that female dominance (lack of male model) is an environmental handicap to mental development for boys.

Shaw and White (1965) found that high achievers, but not low achievers, identified with the like-sex parent as determined by ratings on the Sarbin Adjective Checklist. Nothing was said about the quality of the child-parent identification. Perhaps congruence with like-sex parent meant harmony and respect and lack of strain between them leaving "energy" to pursue academic work.

Hollenbeck (1965) found a higher father-son congruence among achievers than non-achievers and Becker (1970) reported that underachieving boys viewed their fathers

as controlling, suppressive and having trouble adjusting to marriage and parenthood.

Several studies have reported that a positive relationship between father and daughter fosters academic achievement (Crandall, Dewey, Katkovsky, & Preston, 1964; Kronberger & Heck, 1964; Ringness, 1970). Girls more proficient in academic test performance had fathers who more often praised and less often criticized their everyday intellectual attempts (Crandall et al., 1964).

Sears (1970) found that for both males and females, high paternal (and maternal) warmth was associated with high arithmetic and reading achievement while Baer and Ragosta (1966) reported that college males who perceived less loving and attentive fathers (and mothers) had higher verbal than mathematics SAT scores.

Several studies reported evidence that the quality and amount of the father-son relationship and academic achievement were not related. Rubin (1969) found that primary boys and girls who were achievers placed themselves closer to mother than father in a modification of the Kuethe Felt Figure Technique. Achieving males placed themselves nearer to mother than did achieving females. Rosenthal, Ni, Finkelstein, and Berkwitz (1962) studied 405 patients at the Institute for Juvenile Research and did not find any relationships between learning problems and sex types of father-child relationships. Observations

of fathers and their fifth grade sons interacting were not related to the boys' academic achievement (Solomon, Houlihan, Busse, & Parelus, 1971).

The reason for the loss of father may be related to the effects of father absence on academic achievement. Herzog and Sudia (1971) reported in a review of research relating to boys in fatherless families that there is reason to believe that types of father absence, amount and degree of separation, and reason for absence are all factors to consider when making conclusions about the effects of father absence. Clarke (1964), however, found no differences on the California Achievement Tests between third grade boys who lost fathers due to death and those who lost fathers due to divorce. Gregory (1965) reported a similar finding for girls.

Although quite a number of studies have reportedly found significant differences in the academic achievement of father-absent and father-present children (presence-absence broadly defined), several have not. Birnbaum (1966) found no differences among high school students in reading comprehension and vocabulary; Clarke (1964), no differences on the CAT for third grade boys. When Kelly et al. (1965) controlled for SES, they found no differences in the reading achievement of sixth, seventh and eighth graders from broken and intact homes. Keller (1968) found no differences among fifth- and sixth-graders as a function of this variable.

Although this research study is primarily concerned with the effects of fathers and male teachers on academic achievement, it would appear useful to keep in mind some findings regarding the relationship of mothers' attitudes toward father-absent children as they effect academic achievement. Kopf (1970) reported that the father-absent boy's adjustment was related to mother's attitudes and behavior rather than degree of father absence. Hilgard, Newman, and Fisk (1960) had the impression that middle-class father-absent boys who had overprotective and/or academic striving mothers did well in school, particularly in tests involving verbal skills. They found that men who lost fathers during childhood were highly successful in academic pursuits because of, or in spite of, overdependence on mother.

Similarly, Biller (1971b) has suggested that when boys strongly identify with intellectually oriented mothers, the transition from home to the feminine orientation of the classroom is easy. Nelsen and Maccoby (1966) reported a feminine patterning of academic achievement (higher verbal, lower mathematics) for father-absent boys, particularly those who had a close and restrictive relationship with their mothers. It is suggested that boys who retain their first identification with mother, find that the school situation which is also headed by a female presents no problems for them.

Boys who identify with father, find the female teacher the same as mother. Anxiety is invoked and that interferes with learning, resulting in academic achievement problems for boys. Because girls identify with their mothers, it has been suggested that they get more and better language practice than boys. As a result of these positive mother-daughter, teacher-girl relationships, girls do not find the same problem in school as do boys (McCarthy, 1953).

Father Absence and Sex Role Identity

Sex role identity seems to be one of the basic components of personality. Flaws in this identity would appear to contaminate success in other areas of one's personality functioning. Later in this review it will be seen that poor sex-role-identity development does appear to have a negative effect upon academic achievement. Thus it is believed that father's role in sex-role-identity development should be considered in this research.

Four rather extensive reviews of father's role in child rearing have emphasized his importance to the child's development (Biller & Borstelmann, 1967; Biller & Weiss, 1969; Nash, 1965; Tasch, 1952). All of the reviews reported evidence of father's importance to the sex-role-identity development of both boys and girls. His importance for the boy has been commonly assumed. Nash (1965) regarded the father-daughter relationship to be positive also toward the development of girl's sex role identity, whereas the

mother-son relationship can be detrimental to the boy's development. Mussen and Rutherford (1963) believed that father's personality is important toward the development of daughter's femininity by his encouragement of her participation in feminine activities.

Before reviewing the research concerning father absence and the development of sex role identity, several points of view as to how sex role development takes place and/or what are the important conditions are presented. These summaries are based mostly upon secondary sources (Biller, 1971a; Biller & Borstelmann, 1967; Kagan, 1958; Lynn, 1969; Mischel, 1970; Mussen & Distler, 1959). It will be seen that in all of the points of view, father plays some degree of importance in the appropriate sex role development of both boys and girls.

According to the Freudian theory, appropriate sex role development depends upon the boy shifting from an identity with his mother to one with father during the oedipal period, about three to five years of age. The boy is sexually attracted to his mother, but father stands in the way and is seen as a competitor. The boy fears castration by the father. To reduce fears of hostility from father, in a move of defensive identification, the boy shifts to identity with father, represses his desire for his mother, and learns to be masculine. A status-envy theory as developed by Whiting (Burton & Whiting, 1961)

says that the boy will identify with father and learn to be masculine only if father is seen as a consumer of valued resources. According to the Freudian theory, little girls identify with mothers out of fear of the loss of her love. This threatened loss of love motivates a girl to introject her mother's behavior and qualities. This process of analitic identification depends upon a nurturant interaction between mother and daughter.

It can be seen that father's presence is essential for the appropriate identification of boys to take place. His role for girls is not quite so clear. However, according to Leonard (1966) and Deutsch (1944), who speak from the Freudian view point, the girl also is unable to establish the feminine role for herself without adequate fathering. It is he who leads her to adopt an erotic, passive mode of interacting with males.

Mowrer (1950) and Sears (1957) have attempted to reformulate Freudian theory in terms of learning theory concepts (Biller & Borstelmann, 1967). The major hypothesis about masculine development, according to learning theory, is that imitation of father depends upon the degree of warmth and affection father gives to his son. The more love and respect a boy has for his father, the more reinforcing is father's approval of his behavior. When father is unavailable, the boy can engage in nurturing acts through fantasy or role-playing father's behaviors. The same

principles would seem to operate for the girl, only with mother being the primary reinforcer. This theoretical point of view stresses dependency in conjunction with occasional withholding of love as the mechanism bringing about identification.

The role theory as developed by Parsons (1955) has essentially combined the Freudian and learning theory hypotheses. It is a differential theory in which father plays the primary role. Whether identification takes place or not depends upon the power of father or another male. This power depends upon a combination of his reward value and his threat or punishment potential. The boy identifies with the role of the person who is most able to dispense both reward or punishment. Girls identify with a reciprocal role relationship. Thus, father because of his power in the familial relationship is considered the primary transmitter of culturally determined concepts of masculinity and femininity. Johnson (1963), in discussing her interpretation of the Parsonian theory of identification, proposed that children's relationship with mother is not sex-typed, but that the relationship with father is. He differentiates his role toward boys and girls. Brofenbrenner (1961) believed that middle-class techniques of child-rearing are less differentiated toward the sexes, although he, too, has found that fathers tend to differentiate more between the sexes than do mothers.

The role theory seems to depend more upon a powerful person to administer reward and punishment for sex role behavior than it does upon like-sexed parents (Brodbeck, 1954; Rosenberg & Sutton-Smith, 1968; Rothbart & Maccoby, 1966). A child's behavior does not have to be typical of the parent with whom he identifies. Appropriate behavior may be the result of a reciprocal role relationship in which the child and parent participate.

The social learning theory of sex role development hypothesizes that sex role identity is acquired by the same principles as any other aspect of an individual's behavior (Bandura & Walters, 1963). The concept of observation plays an important part in this theory. Behavior modifications result from exposure to a model directly or indirectly. No direct reinforcement of the modeled behavior is necessary for its acquisition. It is thought that the observer vicariously experiences the model's reinforcement. Direct reinforcement would aid the learning process, but it is not considered necessary. According to this theory, mother should serve as the prime model for the girl. However, father as well as mother can reward the girl's imitative behavior of mother. The reward value of parents, whether primary or secondary, depends upon a positive, affectionate, nurturant relationship with the child rather than power over the child. The child's imitation of positively regarded parents is its own reward.

The last theory of sex-role-identity development reviewed is a cognitive one and is quite different in emphasis than the theories presented heretofore. In this theory, modeling and reinforcement are deemphasized. Once a child becomes aware of sex differences and to which category he belongs, he looks for such behavior and finds it rewarding (Kohlberg, 1966). This theory suggests that father-absent boys lack certain cognitive experiences which relate to their intellectual and sex role development. Both Kohlberg (1966) and Santrock and Wohlford (1970) found no differences in sex-role-identity development between father-absent and father-present children when I.Q. was controlled. Since the groups did not differ in cognitive ability, the father-present children did not have the advantage in learning sex role identity.

All of the theories of sex-role-identity development presented would seem to predict that absence of father would lead to inappropriate sex role development for boys, and in some instances, for girls also. The reason would vary according to the theory, but in all theories, his absence would appear to be detrimental. To follow is some empirical research comparing the sex-role-identity development of father-absent and father-present children.

In a review of studies concerning fatherless homes, Herzog and Sudia (1968, 1971) found that only one-half of the studies reported adverse effects of father absence.

The present survey of the research regarding father absence and a specific effect, sex-role-identity development, comes to about the same conclusion. Some of the studies which found father absence did make a difference, reported differences in the global behavior of masculinity or femininity, while others reported differences to be in specific characteristics generally considered as sex-typed.

Bach (1946), Biller (1969a, 1970), Biller and Weiss (1969), Nash (1965), and Santrock (1970) reported findings that indicated that father absence leads to deficits in appropriate sex-role-identity development in boys. Compared to father-absent boys, father-present boys were found to be much more masculine in projective role orientation and slightly more masculine in game preferences (Biller, 1970). Other studies have found that father absence leads to exaggerated masculinity rather than lack of masculinity (Biller, 1968a; Burton & Whiting, 1961; Harrington, 1970; Parsons, 1954; Schoolman, 1969).

Boys who have experienced father absence in their lives, even as late as college, have been found to be more submissive, less aggressive, dependent, and antisocial (Santrock & Wohlford, 1970; P. Sears, 1951; Sears, Pintler, & Sears, 1946; Stolz et al., 1954). Sears et al. reported that three- to five-year old father-absent boys showed less fantasy aggression than father-present boys, while father-absent girls showed slightly more aggression than

father-present girls. Father-present boys also showed more aggression toward their fathers than did father-absent boys. On the other hand, Biller and Borstelmann (1967) found father-absent boys to have more problems in controlling aggression. Santrock and Wohlford (1970) found that if father absence occurred early and was by death, less aggression was expressed. Koppitz (1957) reported that if father absence occurred during the first six years of a boy's life, feelings of inferiority and inadequacy resulted at age 12. Santrock (1970) added that father-absent boys with substitutes were less dependent than those without substitutes.

Other investigators have reported that the time of leaving seems to be an important determinant of the effects of father absence. Many have said that the first five years are crucial for appropriate sex role development (Biller, 1969a; Biller & Bahm, 1971; Hampson, 1965; Hetherington, 1966; Hetherington & Deur, 1971; Money, 1965; Motte, 1970; Stolz et al., 1954). Some would limit the crucial years to the first two or three. In a review, Biller (1970) concluded that even after father returned, boys who experienced father absence during the preschool years were less masculine than boys whose fathers had been consistently present. Siegman (1966) described medical students who had experienced one year of absence during the first four years of life as exhibiting antisocial

behavior. This finding would appear to be related to that of Lynn and Sawry (1959) who reported that if separation was during the early years, the boy was less masculine; if the separation was later, he exhibited compensatory masculinity.

Few differences in femininity or sex-typed characteristics have been reported between father-absent and father-present girls. College girls orphaned by death were found to be more feminine than girls orphaned for other reasons, and non-orphaned girls (Baggett, 1967). Winch (1962) found that father-absent college girls tended to be more like mothers than did father-present girls. Father-absent boys were not more like their mothers than father-present boys, however. Santrock (1970) and Sears et al. (1946) did not find femininity differences between father-absent and father-present girls.

The following studies, representing preschoolers through college, black and white, concluded that father absence generally did not affect scores on specific measures of sex role identity (Baggett, 1967; Barclay & Cusumano, 1967; D'Andrade, 1962; Donini, 1967; Greenstein, 1966; Hetherington, 1966; McCord, McCord, & Thurber, 1962; Miller, 1961; Mitchell & Wilson, 1967; Santrock & Wohlford, 1970; Stephens, 1961; Thomes, 1968; Wohlford, Santrock, Berger, & Liberman, 1971). This general conclusion of no effect of father absence on sex role identity would

seem to be dependent upon what particular combination of independent variables characterized the subjects. For instance, length of absence, age of child during absence, amount of stress generated by absence, reason for absence, and measure of sex role identity would probably determine the nature of the effects, if any. Biller (1968a, 1968b, 1969a), for instance, has suggested that father absence affects sex role orientation but not more manifest aspects of masculinity such as sex role preference. Since there was generally very little in common to most of these studies, that is in terms of age of subjects, measure of masculinity and femininity, length of absence, etc., it was very difficult to know what conclusions should be made about the effects of father absence on sex role identity development.

To complicate matters, Rau (1960) has suggested that there are several factors to be considered in determining the effects of father presence on sex typing. She proposed that such things as father's warmth and involvement, his availability as a model, mother-father relationships, etc., should be studied. Moulton, Burnstein, Liberty, and Altucher (1966) and Hetherington (1965) reported that masculine development was retarded if mother was dominant in the home or if she was critical of her husband. Data presented by Biller (1969b) supported this conclusion. Father-dominated boys were more likely to behave in a masculine way.

Feminine development was not affected in the study by Hetherington. Freedheim (1961) found father salience as determined from interviews with second-to fifth-grade boys to be related positively to scores in the IT Scale for Children and to teacher ratings of masculinity. Nash (1965) and Steimel (1960) have proposed that masculinity is related to the general amount of contact with adult males in general, while Biller (1968a) has suggested that the quality of the father-child contact is important. Biller and Borstelmann (1967) found that boys who have passive, ineffective fathers appear to be less masculine. Radin (1972), however, reported no significant correlation between preschool boys' sex role preference and paternal nurturance.

Sex Role Identity and Academic Achievement

Research by Ponzo (1968) and Lamkin (1968) has suggested the hypothesis that appropriate male sex role identity and achievement are negatively related. The characteristics of masculinity presumably distract from applying oneself to academic achievement.

Research by Sexton (1970) has supported this hypothesis. More masculine ninth graders as measured by the California Personality Inventory had lower report card averages than less masculine ninth graders. The least masculine boys had better marks in all courses except physical education and science. It was suggested by Sexton that the qualities of masculinity such as aggressive,

active, athletic, strong, etc., work against the male student, both in terms of adjusting to the classroom situation and in terms of having the time to do the work necessary to achieve in school.

On the other hand, Anastasiow (1965), Bruck and Bodwin (1962), Ferguson and Maccoby (1966), Granlund and Knowles (1969), Lefkowitz (1962), Milton (1957), Sears (1970), Shaw and White (1965), and Vroegh (1969) all have reported that appropriate sex role identity and/or a high self-concept are generally positively related to academic achievement. High number ability has been associated with high masculine ratings by peers (Ferguson & Maccoby, 1966). A positive relationship between sex role preference and the IQ of third- and fourth-grade boys has also been found (Lefkowitz, 1962). Sears (1970) found that femininity in either sex as measured by the California Personality Inventory was associated with a poor self-concept. In turn poor self-concept was associated with lower arithmetic and reading achievement.

Anastasiow (1965) found that six-year-old boys who had low reading scores also had inappropriate masculine identities as determined by adults' ratings on a bipolar scale of masculinity-femininity. He also found teachers' ratings of masculinity of first graders to be positively related to school competence. Vroegh (1969) reported positive relationships between Stanford Achievement Test scores

and peer ratings of masculinity and femininity for third grade boys, fourth and sixth grade girls, and fifth grade boys and girls. This relationship was not found for seventh and eighth grade boys and girls.

Oxhorn (1966), however, found no differences in the masculine orientation of adolescent achievers and non-achievers. The Draw-A-Person test and M of GAMIN served as the measures of masculinity. Nor did Radin (1972) find that male sex role preference as measured by a modification of IT Scale for Children was related to IQ of four-year-olds. Zuckman (1955) concluded that sex membership between eighth graders was a better predictor of mental ability than was masculinity-femininity identification.

More studies have found a positive relationship between appropriate sex role identity and academic achievement than have found no relationship or a negative one. This review has not attempted to evaluate the quality of the research evidence. On the basis of quantity of the findings of a positive relationship it has been assumed for the purposes of this study that father presence encourages appropriate sex role identity. An appropriate identity does not draw upon energies that can otherwise be directed toward achieving in school rather than solving an identity problem.

CHAPTER III

PROCEDURE

Subjects

The investigator wrote letters to the superintendents of a number of school districts in the Chicago suburban area and invited them to participate in the study as described (see Appendix A). A follow-up telephone call often resulted in a meeting with the superintendent, research director, and/or principals in the district to discuss the project in more detail. The subjects in this study came from five school districts where the superintendents and those involved consented to and met the conditions necessary to conduct the study. Failure to participate was for one or more of the following reasons: no male teachers in the elementary grades, classrooms not self-contained, school records not available to non-school personnel, lack of appropriate standardized academic achievement scores, too many other ongoing projects, lack of desire to involve parents in such a project, and fear of parental complaints due to recent problems in sex education. Even though this project was unrelated to the last reason, it was seen as tangential by some superintendents.

Students. The primary sample in this study consisted of 416 Caucasian fourth- and fifth-grade boys ($N=215$) and girls ($N=201$) in the classrooms of 14 male

and 14 female teachers. Other students in this study for whom some conclusions will be reported were 90 boys and 82 girls in the classrooms of the above teachers but whose parents did not wish to participate in the study. A pilot sample for some analyses of the Father Activity Inventory (FAI; see Appendix B) designed to determine extent of father presence-absence consisted of 115 fourth- and fifth-grade boys and girls whose parents completed the inventory.

The girls in the study had a mean age of 120.7 months, S. D. = 6.7, and the boys had a mean age of 121.2 months, S. D. = 7.0. A t of .44 with 415 df indicated that there was no significant difference in the age of the boys and girls.

Parents. In the primary sample of 416 boys and girls, 75% of their fathers had occupations that were classified as professional, technical, managerial, official, or proprietary according to the Alphabetical Index of Occupations and Industries (Bureau of Census, 1960). The occupations of the fathers of 21% of the sample were classified as clerical, kindred, sales, crafts, or supervisory. The remaining 4% was classified as operative, household work, manual labor, or occupation not reported.

Teachers. The 14 male teachers in this study were selected to participate because they taught in self-contained classrooms in the school districts that consented to participate in this study. In instances where there

were more female teachers in the same school and grade level as one of the 14 male teachers, a table of random numbers was used to select a female teacher to be part of the study. The final sample of teachers consisted of 14 males and 14 females, with a school and grade level being represented equally often between sex groups.

No demographic information was obtained from the teachers since the hypotheses regarding sex of teacher and academic achievement do not specify any other criteria such as age, number of teaching years, SES, etc., to be relevant. Thus, the investigator thought that demographic information would add little to the interpretation of the data. It has been assumed that these teachers are representative of teachers in other classrooms similar to the ones the boys and girls in this sample attended.

Instruments

Father Activity Inventory. A copy of the Father Activity Inventory (FAI) is presented in Appendix B. It was designed by the investigator to determine primarily the extent of father presence-absence in the home. It can be seen that some of the items in the FAI do not concern the specific purpose of this study. Analyses of these items will be reported at a later date.

The FAI was addressed to the parents of the boys and girls in this study and mailed to the home. Each inventory was accompanied by a letter of introduction from the

investigator (see Appendix C), a letter from the school district in three of the districts (see Appendix D), and an addressed and stamped return envelope. In two school districts, a request for participation in the study (see Appendix E) was sent to parents directly by the district office and refusals were not sent an FAI.

Non-returns in the primary sample were sent as many as two follow-ups (see Appendix F). The final rate of return was 70%. The FAI was sent to the parents of 207 boys and girls in the pilot sample. Only one follow-up letter was sent with the final rate of return being 57%.

Items 2a., 2b., 3., 4., and 5. of the FAI were used as measures of extent of father presence. Any subject with missing data for any item was assigned the average score of the like-sex students for that item. This was necessary in less than 2% of the cases.

A mother typically completed the inventory. Mothers completed 80.3% of the inventories; fathers completed 15.2%. The remaining inventories were completed by child or other.

Achievement tests. Pre- and posttest scores from standardized academic achievement tests were obtained from the school records of each student. Unfortunately, but it seems to be a general problem (Fleischman, Orr, & Strasel, 1971), the school districts used different tests to measure academic achievement. Two of the districts administered the Metropolitan Achievement Tests (Durost, Bixler,

Wrightstone, Prescott, & Balow, 1971) in October, 1969, and November, 1970; one administered Stanford Achievement Test (Kelley, Madden, Gardner, & Rudman, 1964) in September, 1969, and October, 1970; and one administered the California Achievement Tests (Tiegs & Clark, 1957) in April, 1969, and May, 1970.

In order to use the achievement scores obtained from these tests in the same analyses, it was decided for the following reasons to use percentile ranks based on the national norms presented for each of the three tests and to combine these ranks as if they were from a common test.

- a.) In a study to determine the interrelationships of scores on six achievement batteries, Fleischman et al. (1971) reported that certain reading and mathematics subtests in these batteries were highly related within subject matter and could be considered parallel tests. The results of their study have been interpreted to indicate that it is feasible to conduct a national study to equate the reading and the mathematics subtests from the various batteries. That study has not been completed as yet.
- b.) It was the investigator's considered opinion that for the purposes of this study that students with the same percentile rank on a given subtest in the three batteries had similar ability as a result of the cross sampling of the population used to determine the standardized test norms. Thus percentile ranks are indicators of relative ability.

Pre- and posttest achievement scores in reading, mathematics, and language were recorded from the school record of each student. An exception was a group of students in one of the school districts where no language scores were available. The Metropolitan Achievement Tests and the California Achievement Tests provide total reading and total mathematics scores computed from the relevant subtests. In addition, a language score is provided. It was necessary for the investigator to compute total reading and total mathematics scores for the students taking the Stanford Achievement Tests. The reading subtest scores for Word Meaning and Paragraph Meaning were averaged. The mathematics subtests averaged were Arithmetic Computation, Arithmetic Concepts, and Arithmetic Application. A language score was provided directly.

If an academic achievement score was missing for any subject on the pretest, the average score of the students in the subject's class was recorded. If a score was missing on the posttest, the student was assigned the score he obtained on the pretest. Less than 2% of the cases had missing scores on either the pre- or posttest.

Sex-role-identity rating scale. A copy of the scale used to rate appropriateness of masculinity or femininity of the teachers as perceived by four of their colleagues is presented in Appendix G. In earlier research by this

investigator (Vroegh, 1971) boys and girls in grades one to eight used this scale to rate each other for appropriateness of masculinity or femininity.

CHAPTER IV

RESULTS

Representativeness of Sample

In order to determine if there were any differences in the initial academic achievement of children of parents who were respondents and non-respondents, t tests between their pretest scores were performed. The following results for reading, $t = .942$ with 586 df , mathematics, $t = 1.19$ with 586 df , and language, $t = 1.92$ with 518 df indicated there were no differences in academic achievement in those subject areas.

Another indication of the comparability of the respondents and non-respondents is the correlations between pre- and posttest scores. The correlations in three subject areas are of the same magnitude for both groups. The correlations for respondents and non-respondents respectively, are reading, .87 and .89, mathematics, .88 and .88, and language, .86 and .89.

Pilot Study of Father Activity Inventory

In order to determine whether a total score should serve as the measure of extent of father presence-absence or whether each item should be looked at separately, data obtained from the pilot sample for the four items designed to measure extent of father presence-absence were subjected to a stepdown multiple regression analysis (Steel & Torrie, 1960) with the total score serving as the dependent variable.

A summary of this analysis can be seen in Table 1. The successive stepdown analyses appeared to indicate that extent of father presence accounted for the most variance; father-child closeness and extent of father absence accounted for about equal amounts of variance, but less than extent of father presence; and number of meals together was hardly missed in terms of the amount of variance for which it accounted.

In Table 2 the intercorrelations of the items within sex can be seen. The correlations are generally significant, but the size of the correlations suggests that they are not measuring a single variable of father presence-absence. These correlations and the results of the regression analysis suggested that the items should be used individually as alternative measures of extent of father-presence-absence when testing the hypotheses of this study.

For many of the analyses testing the hypotheses, it was decided to use only items 2. (extent of father presence) and 5. (extent of father absence) because these items were most directly worded to the question of extent of father presence-absence. In addition, item 2. was the one item most highly correlated with the other items. For some analyses, all of the codes from 1 to 6 for items 2. and 5. were used. In others, the codes of 1 to 4 (representing 0-1 hour per day present or 2 to 12 times per week absent) were recoded as 1 (low father presence or high

Table 1
Regression Analysis of Father Activity
Inventory Items on Total Score

Item	Stepdown Regression Beta Coefficients			
	1	2	3	4
Extent of father presence (2a., 2b.) ^a	.48	.54	.69	.78
Father-child closeness (3.)	.38	.41		
Number of meals together (4.)	.24			
Extent of father absence (5.)	.41	.42	.45	
Multiple <u>R</u>	1.00	.98	.90	.78
<u>R</u> ²	1.00	.95	.80	.61
<u>p</u> <	-	.01	.01	.01
<u>df</u>	4/110	3/111	2/112	1/113

^aThe numbers following the item refer to the item number in the FAI (see Appendix B).

Table 2
Intercorrelations among Father Activity Inventory Items

Item	2.	3.	4.	5
Extent of Father Presence (2a., 2b.) ^a		.38**	.25*	-.31*
Father-Child Closeness (3.)	.30*		.10	-.13
Number of Meals Together (4.)	.42**	.17		-.27*
Extent of Father Absence (5.)	-.12	-.21	-.10	

Note.--The non-italicized correlations are for 63 boys and the italicized correlations are for 49 girls.

^aThe numbers following the item refer to the item number in the FAI (see Appendix B).

* $p < .05$

** $p < .01$

father absence) and codes of 5 and 6 (representing 2 to 3 hours per day present or 1 time or less per week absent) were recoded as 2 (high father presence or low father absence).

For those cases in which "NO" was checked for item 1., "Was there a father in your home...", the responses to item 2b. were recoded to conform to the coding of item 2a. If the "NO" was due to death, a recode of 1 was given, indicating 0 hours of contact. Responses to item 2b. of 1-5 hours per week were recoded as 3 (comparable to $\frac{1}{2}$ hour per day on item 2a.). Answer of 5-10 hours per week were recoded as 4 (comparable to 1 hour per day on item 2a.), and answers of 10 hours or more per week were recoded as 5 (comparable to 2 hours per day on item 2a.).

Measurement of Change

The measurement of change is considered one of the more difficult issues in psychological and educational research, and the discussion that has surrounded this topic over a number of years is far from reaching consensus. Just about every solution proposed to investigate "change" has been criticized. Cronbach and Furby (1970) examined several procedures that have been proposed and concluded by arguing that change or gain scores are rarely useful, no matter how they are adjusted.

This investigator, on the other hand, finds the measurement of change of considerable interest, especially

in the field of education. One often wants to know for reasons of efficiency, cost, proficiency, etc., if a proposed method of teaching is better than an old one. Rephrasing the question to avoid the notion of change often changes the problem and does not provide the answer necessary to make a "best-guess" decision.

At the present time there seems to be no single, true procedure for estimating change. Consequently, it was judged that analyses utilizing residual gain scores would provide reasonable tests of the hypotheses in this study.

Manning and DuBois (1962) suggested that if the purpose of the study is to investigate the correlates of change, the residual represents the portion of the final score not predictable from the initial score and is therefore logically sound and statistically useful. To investigate the correlates of improved academic achievement scores is the purpose of the present study.

This decision was reinforced by the fact that there were virtually no differences in academic achievement on the pretests between the independent variable groups. A summary of these test results appears in Table 3. It can be seen that only for language pretest scores is there a significant difference between boys and girls, with girls having a higher mean score, 74.72 versus 67.21 ($t = 2.60$, $df = 369$, $p < .05$).

Table 3
Mean Pretest Scores in Academic Achievement

Variable	Mathematics			Reading			Language		
	<u>X</u>	<u>df</u>	<u>t</u>	<u>X</u>	<u>df</u>	<u>t</u>	<u>X</u>	<u>df</u>	<u>t</u>
Male Teachers	65.10			73.09			69.64		
Female Teachers	66.68	406	.40	70.03	410	.87	71.90	367	.78
Boys	66.52			70.77			67.21		
Girls	65.30	411	.31	72.22	413	.41	74.72	369	2.60*
Low Father Presence	67.32			73.33			73.03		
High Father Presence	65.03	341	.60	70.26	342	.91	69.38	321	1.28
High Father Absence	66.40			73.25			71.79		
Low Father Absence	64.98	313	.41	68.81	278	1.45	68.70	260	1.06

* $p < .05$

Residual Change Scores

Such scores represent the amount of change that is due to variables other than what is expected given initial ability. These scores are that portion of the posttest that is not predictable from, that is uncorrelated with, initial status.

In this study, the pre-posttest correlations were high; reading, .87 (412 df), mathematics, .88 (412 df), and language, .86 (370 df). The size of these correlations suggested that the computed residual change scores represents about 26% of the variance of the posttest score. Included in this variance are errors of measurement and excluded is true change because residual change scores tend to overcorrect.

Residual change scores in reading, mathematics, and language were computed for each student, using the formula presented by Manning and DuBois (1962):

$$C.S. = Z_{\text{post}} - r_{\text{pre-post}} Z_{\text{pre}}.$$

These change scores were then standardized so that the resulting distribution of scores had a mean of 100 and a standard deviation of 20.

Reliability of Residual Change Scores

The data available permitted no exact estimate of reliability of the residual change scores. It was decided that even a crude estimate of the reliabilities of the mathematics, reading, and language change scores would

be helpful in evaluating the results of the tests of the hypotheses.

In the pre-posttest case, the formula for estimating the reliability of a residual (Manning & DuBois, 1962) is:

$$r_{(2.1)(2.1)'} = \left[(r_{22}') - r_{12}^2 (2 - r_{11}') \right] / (1 - r_{12}^2).$$

Median reliabilities for the scores in mathematics, reading, and language were computed from the three reliabilities published for these scores in the manuals for the three standardized tests used in this study (Durost et al., 1971; Kelley et al., 1964; Tiegs & Clark, 1957).

The median reliability for a given set of scores was used for the reliability of both the pre- and posttest scores. The crude estimates of reliability of the residual gain scores computed were .31 for mathematics, .58 for reading, and .63 for language. These reliabilities are modest in size, but are generally of an acceptable magnitude for the purposes of this study.

Tests of the Hypotheses

Hypothesis I: The more father absence, the higher the mathematics change scores of boys and girls with male teachers. With mathematics change scores serving as the criterion, a stepdown multiple regression analysis according to Steel and Torrie (1960) was performed. The predictor variables were: sex of teacher, extent of father presence, sex of child, father-child closeness, and extent of father absence. A summary of the results is presented

in Table 4. It can be seen that the regression equation utilizing all of the predictor variables did not predict the criterion. Nor were any of the succeeding equations significant.

In this initial regression analysis only those subjects were included whose FAI's indicated that there was a father in the home. For the subjects whose fathers were not in the home ($N = 15$), no scores were available for the father-child closeness or extent of father absence variables.

A second regression analysis to test Hypothesis I was performed using data from the total sample ($N = 416$). Only the item of father-presence (item 2.) served as a possible predictor along with sex of teacher and sex of child. A summary of this analysis can be seen in Table 5. Again no significant regression equations were found. The hypothesis was not supported. No relationship between extent of father presence-absence, sex of teacher, and sex of child was found.

As additional tests of the hypothesis, analyses of variance (Bancroft, 1968) were performed on the change scores of subjects with pretest scores under 60. It is that subsample in particular that one might expect to change significantly if the independent variables were indeed effective. Sex of child, sex of teacher, and high-low father presence or high-low father absence served as the

Table 4
Regression Analyses on Achievement Change
Scores in Father-present Subsample¹

Predictor	Mathematics		Reading		Language	
	All Predictors	All Predictors	All Predictors	Best Predictor	All Predictors	Best Predictors
Sex of Teacher	-.06	.17	.17	.17	-.02	
Extent of Father Presence	-.12	.01			.02	
Sex of Child	.02	.05			.10	.10
Father-Child Closeness	.12	.08			.05	
Extent of Father Absence	-.02	.02			-.12	-.11
Multiple R	.14	.20		.17	.16	.14
R ²	.02	.04		.03	.03	.02
p <	N.S.	.01		.01	N.S.	.05
df	5/395	5/395	1/399		5/352	2/355

¹All coefficients are beta weights.

Table 5
Regression Analyses on Achievement Change
Scores in Total Sample¹

Predictor	Mathematics	Reading		Language
	All Predictors	All Predictors	Best Predictor	All Predictors
Sex of Teacher	-.06	.16	.16	-.01
Extent of Father Presence	-.05	.03		.02
Sex of Child	.02	.06		.08
Multiple <u>R</u>	.08	.18	.16	.09
<u>R</u> ²	.01	.03	.02	.01
<u>p</u>	N.S.	.01	.01	N.S.
<u>df</u>	3/412	3/412	1/414	3/368

¹All coefficients are beta weights.

independent variables. Scores of father presence and absence were dichotomized as described in the Procedure. It can be seen in Tables 6 and 7 that none of the independent variables was significant. None of them predicted the change scores. These analyses also did not lend support to Hypothesis I, the more the father absence, the higher the mathematical change scores of boys and girls with male teachers.

Hypothesis II: The more father absence, the higher the reading change scores of boys with male teachers. When stepdown regression analyses were performed on the predictor variables with reading change scores serving as the criterion, it was found that the regression equations including all the predictors were significant. Summaries of the results for the father-present subsample and the total sample appear in Tables 4 and 5, respectively. It can be seen that the multiple R 's of .20 (father-present subsample, see Table 4) and .18 (total sample, see Table 5) were significant with $p < .01$. Sex of teacher was the best predictor of reading change scores. Sex of child and extent of father presence-absence did not make significant contributions to the regression equation as hypothesized. Only 1% of the predicted variance is lost when these predictors are removed from the regression equations, and sex of teacher is the only predictor in the equations. In the total sample, sex of teacher correlated .16 with

Table 6

Analyses of Variance of Achievement Change Scores of
Father-present ss with Pretest Scores under 60

Source	Mathematics			Reading			Language		
	<u>df</u>	<u>MS</u>	<u>F</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sex of Teacher	1	957.25	1.78	1	723.50	1.17	1	5.50	.01
Father Presence	1	168.50	.31	1	109.00	.18	1	118.25	.15
Sex of Child	1	149.75	.28	1	1799.75	2.92	1	1213.25	1.56
Interactions	4	182.56	.34	4	441.38	.72	4	236.94	.30
Within	146	537.97		118	615.93		102	776.07	
Total	153			125			109		

Table 7
Analyses of Variance of Achievement Change Scores of
Father-absent Ss with Pretest Scores under 60

Source	Mathematics			Reading			Language		
	<u>df</u>	<u>MS</u>	<u>F</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sex of Teacher	1	1139.75	2.08	1	1599.25	2.69	1	89.50	.12
Father Absence	1	254.00	.46	1	36.25	.06	1	3079.25	4.12*
Sex of Child	1	119.75	.22	1	811.50	1.37	1	2084.75	2.79
Interactions	4	194.88	.36	4	948.31	1.60	4	557.56	.74
Within	113	547.95		113	593.67		99	747.50	
Total	120			120			106		

* $p < .05$.

reading change scores, significant with $p < .01$, the father-present subsample, sex of teacher correlated .17 with reading change scores, significant with $p < .01$.

Although sex of teacher was related to reading change scores, the direction of relationship was not in the hypothesized direction. Since male teachers were scored 1 and female teachers, 2, the significant relationships indicated that female teachers, not male teachers, were related to higher change scores in reading, regardless of the sex of the child and extent of father presence-absence.

Analyses of variance were also performed on the reading change scores of subjects with pretest scores under 60 as alternative tests of the hypothesis. The results of these analyses indicated that sex of child, sex of teacher, and high-low father presence (see Table 6) or high-low father absence (see Table 7) had no significant effects on the reading change scores of children with pretest scores under 60.

The hypothesis that the more father absence, the higher the reading change scores of boys with male teachers was not supported. In fact, it was found in one of the tests of the hypothesis that children of both sexes had higher change scores under female teachers.

Hypothesis III: The more father absence, the higher the language change scores of boys with male teachers. A stepdown regression analysis was performed on the language

change scores of the father-present subsample with the predictors being sex of teacher, sex of child, and three measures of extent of father presence-absence. It can be seen in a summary of this analysis in Table 4 that sex of child and extent of father absence were significant predictors of language change scores. $R = .14$ with $p < .05$ and $2/355$ df. However, a positive beta weight for sex of child and a negative one for extent of father absence indicated that it was girls with high absent fathers who had the higher change scores. Sex of teacher was not a significant predictor. The finding in the father-present subsample was not confirmed when a regression analysis was performed on the language scores of the total sample with the potential predictors being sex of child, sex of teacher, and extent of father presence (see Table 5). None of the variables predicted the change scores.

When an analysis of variance was performed on the language change scores of father absent subjects with pre-test scores under 60, it was found that high-low father absence had a significant effect ($F = 4.12$, $p < .05$, df = $1/99$), but that sex of child and sex of teacher did not (see Table 7). Boys and girls with high father absence had a mean language change score of 105.7 and those with low father absence had a mean language change score of 95.7.

The mean change for girls was 106.3 and for boys, 98.6. The difference between these change scores was not

significant, but when it is viewed in conjunction with the significant mean difference in change between low and high father-absent subjects, the results of this analysis tend to support the significant regression analysis findings for the language change scores. These significant results did not support the hypothesis, however. Rather children (a tendency toward girls) with high father absence, regardless of sex of teacher, had a higher mean language change score.

A second analysis of variance of the language change scores of father-present subjects with pretest scores under 60 indicated that sex of teacher, sex of child, and high-low father presence had no significant effects (see Table 6). The hypothesis found no support in this analysis.

Hypothesis IV: The more male presence experienced by boys and girls, the higher the mathematics achievement scores. In Table 8 is presented a summary of a regression analysis performed on the mathematics posttest scores as a test of this hypothesis. The best predictors of the mathematics posttest scores were extent of father presence and father-child closeness. The direction of the relationship of the extent of presence does not support the hypothesis, however. The regression analysis indicated that the more absent the father, the higher the mathematics score.

Father-child closeness was related to the mathematics scores in the hypothesized direction. The closer the father

Table 8
Regression Analyses on Posttest Achievement
Scores in Father-present Subsample¹

Predictor	Mathematics		Reading
	All Predictors	Best Predictors	All Predictors
Sex of Teacher	.01		.02
Extent of Father Presence	-.14	-.15	-.10
Sex of Child	-.01		-.02
Father-Child Closeness	.17	.17	.12
Extent of Father Absence	-.07		-.07
Multiple <u>R</u>	.17	.15	.13
<u>R</u> ²	.03	.02	.02
<u>p</u> <	.05	.01	N.S.
<u>df</u>	5/395	2/398	5/395

¹All coefficients are beta weights.

and child, the higher the mathematics achievement scores. Since it is not known how much closeness of father and child reflects father presence, this positive relationship alone can not be interpreted as strong support for the hypothesis.

It can be seen in Table 8 that neither sex of teacher nor extent of father absence were significant factors in the prediction of mathematics achievement posttest scores. Thus the findings of this regression analysis did not lend strong support to the hypothesis that the more male presence experienced by boys and girls, the higher the mathematics achievement scores. The positive relationship between father-child closeness and mathematics achievement suggested that the quality of the relationship rather than the amount of time spent together may be the crucial variable.

Hypothesis V: The more male presence, the less high reading scores are dependent upon sex of child. A stepdown regression analysis of the reading posttest scores with sex of teacher, sex of child, and three measures of father presence-absence serving as the possible predictors did not support the hypothesis. As can be seen in Table 8, none of the predictors accounted for a significant amount of the variance of the reading posttest scores.

Sex-role-identity Ratings of Teachers

Although the theories of the development of sex role identity do not explicitly state that adequate sex role

identity of the model, reinforcer, etc., is necessary for the development of appropriate sex role identity in a child, it has been suggested that such is a necessary but not sufficient condition. It might be concluded that lack of adequate sex role identity on the part of the teachers of this study may have accounted for the negative results in this study. Thus ratings on the variable of sex role identity were obtained for the 14 male and 14 female teachers in this study.

It was planned that a random sample of four colleagues would be asked to rate the teachers on the scale presented in Appendix G. Because of administrative requirements in the schools, it was necessary to permit the school principals to distribute the forms to willing raters. This meant that the selection of raters was not random, and the resulting data may be somewhat suspect.

The mean ratings for the male teachers was 3.27 with a standard deviation of .54. For the female teachers, the mean rating was 3.58 with a standard deviation of .36. Since "1" represents "very little like a masculine male, or a feminine female," and "4," "very much like a masculine male, or a feminine female," these ratings do not suggest that the male and female teachers had inappropriate sex role identities.

CHAPTER V

SUMMARY OF RESULTS AND DISCUSSION

No support was found in this study for a general hypothesis that male teachers when compared to female teachers improve the academic achievement of boys, and girls, who experience varying degrees of father absence. One significant finding indicated that female teachers were related to higher reading change scores of father-absent children, but this finding was considered of borderline significance since it was not confirmed in a second but somewhat different analysis of the same data.

This conclusion has at least three limitations. One of them concerns the definition of father presence-absence. Among the sample, only 15 were classified as truly father-absent by death, divorce, or separation. The remaining 401 subjects were considered father-present children who experienced varying amounts of father absence. Some of these children enjoyed a great deal of father presence, some more than three hours a day. Others, on the other hand, experienced a great deal of father absence, spending as little as 15 minutes per day with their fathers. In fact, some of the father-absent children whose parents were divorced saw their fathers much more frequently than this. Thus, in this study, father presence is represented on a continuum of quantity and the results of this study are qualified by father absence so defined.

This definition differs from that in many earlier studies which found a relationship between father absence and poor academic achievement. In those earlier studies, fathers were generally considered to be truly absent by reason of death, divorce, or desertion. This investigator also questions whether divorce represents total absence. Very few such cases like this exist in the population studied here. Mothers alone generally can not afford to live in the suburban areas inhabited by the population of this study. Perhaps this lack of similar operational definition accounts for the lack of agreement between the findings of this study regarding father absence and underachievement and other studies of these variables.

Second, the generality of the conclusion of this study is limited to the effects on children from a generally higher socio-economic stratum than the average. Father absence is likely to be experienced differently in this population. Lessing et al. (1970) suggested that in lower SES groups father absence leads to a deficit in intellectual stimulation because the family's resources are focused mainly upon survival. Mothers in the middle- and upper-middle class strata generally have more time to be stimulating to their children. In addition, they are able to make the effort to assure that their children come in contact with the many male models in the community who can serve as father substitutes. In communities of higher

SES groups there are many activities with male leaders available; there are also many fathers available in the homes surrounding the father-absent children. Thus, a male teacher is to the father-absent child just one of many possible influences and may have had no effect for this reason.

Third, a conclusion has been made about the intervention of male teachers who were with their students for only one school year. It is conceivable that intervention over a longer period of time would have been beneficial. A research situation suitable for determining if a male teacher for two or more years will have the hypothesized effect is almost impossible to locate. Most male teachers in elementary school are in the fifth grade. Some are in the fourth grade but rarely in the same schools where male fifth grade teachers are. (Sixth-grades have many male teachers, but in the organization of the schools these days that grade is no longer grouped with the other traditionally elementary grades. In addition, sixth graders are no longer in self-contained classrooms.)

Teaching originally was a man's job, but with the coming in England of the Renaissance, the claim for the intellectual rights of women, the dissolution of monasteries, and the arrival of refugees, it was necessary to hire women teachers to meet the teaching needs (Times Educational Supplement, 1930). Since the late 1800's women

teachers in the elementary schools have outnumbered men. Low pay, and more recently suspicion of homosexuality, have been reasons for the lack of more men in the schools (Wilson et al., 1966).

With the coming of women's liberation and higher pay scales in teaching as well as more tolerant views of homosexuality (regardless of whether in fact homosexuality is represented in unusual numbers among elementary teachers), more males are choosing and are being selected to teach in the elementary schools. In the near future it may be possible to design a more crucial experiment with boys having male teachers for longer periods of time than one year.

Now let us explore several possible theoretical reasons for the lack of relationship as predicted. If lack of appropriate sex role identity (the identity per se or the resulting lack of poor adjustment) and poor academic achievement of the father-absent child can be improved by male teachers in the classroom, the theories about the development of sex role identity would suggest that intervention with a male teacher earlier than in this study might have the desired impact. Several investigators (Biller, 1970; Money, 1965; Nash, 1965) have suggested that father presence during the first five years of life is crucial in the development of appropriate sex role identity. Goldberg and Lewis (1969) reportedly observed sex

appropriate behavior in boys and girls as early as 13 months.

Thus, the intervention of a father substitute as late as fourth or fifth grade might be too late. By these years, the patterns of identity are likely well established and the influence that a male teacher might have in a classroom situation would be minimal. His behavior and presence would possibly be insufficient to have the desired effect on a well established pattern of behavior.

Another line of theory suggests that by the age of ten or so, adults no longer have the same effects on children's behavior that they once had. Boys in particular may be less adult-motivated and more peer- and/or self-motivated. Long, Henderson, and Ziller (1967) have suggested that as children get older, they come to identify more with friends and less with teachers. Peers then become the motivating force and source of models. Kronberger and Heck (1964) and Crandall et al. (1964), on the other hand, have suggested that boys' motivation to achieve comes from within rather than from adult or peer approval. Crandall et al. found very few relationships between parental attitudes and behaviors, and second- to fourth-grade boys' academic performance. Boys' belief in self-responsibility correlated .49 with reading achievement and .36 with mathematics achievement. It is suggested by the present investigator that both self-motivation and peer-

motivation be explored as possible answers to the academic problems of boys.

The nature of father absence and father presence seem to need more clear specification if we are to understand the relationship of those variables to academic achievement. It has been found that in relation to other outcome variables it is father's warmth combined with authority in terms of reward and punishment value that are effective. It may be the quality of his presence or absence that should be investigated. One of the findings in this study hinted at this possibility. The measure of father-child closeness was related to mathematics posttest scores while the measures of father presence and absence were not.

McCord et al. (1962) have suggested that the effects attributed to father absence per se are more likely attributable to conflict in the home due to mother-father disagreement that has occurred in broken homes. Lessing et al. (1970) came to a similar conclusion. In their study of intelligence test correlates of father-absent children, they found no data to support the identification hypothesis as the sole explanation of the effects of father absence on academic achievement. They suggested the possibility that the detrimental effects of father's absence could be due to instability and amount of stress created by his absence rather than lack of a male model.

Conflict and rejection are also present in varying degrees in homes classified as father present. Perhaps

the father who is frequently absent due to his job and social activities causes family conflict. Or perhaps another father is always home, but refuses to participate in activities with his children or in the childrearing process. One of the inventories returned for this study indicated that the home was a father-present one. A note added that father shuts himself in his room every night and does not participate in family activities.

Crain and Stamm (1965) found that mother is warmer when father is present. If high father-present children do better in school, perhaps it is due to a warmer and more supportive attitude of mother rather than father's presence. These investigators also found no difference in father-absent and father-present children's perceptions of father's authority and love. Such a finding reinforces the hypothesis that it is not the mere father presence-absence that counts but the quality of his relationship with the child, and perhaps the child's mother.

Motte (1970) studied seven- to eleven-year old boys varying in degrees of natural home. Boys with two natural parents in the home had the highest academic achievement. Motte expected that boys who had lived in two or fewer foster homes would have higher academic achievement than children who had mothers only, but they did not. Again, conclusions attributed to stability of father presence or father substitute may really reflect something about

the quality of the presence. Kriesberg (1967) reported that husbandless mothers in a housing project were more concerned about education than married ones. The lack of a supportive environment, however, seemed to be a strong factor in underachievement of children from such homes. Again, quality of concomitant variables rather than father absence per se seems to be important in determining academic achievement.

In this study, the amount of time father spent in the home, or away from home, was judged for the most part, by mother. It is suggested that in future studies of this variable, that the child's perception of his presence-absence in terms of amount and quality be used as the independent variable. It is more likely this perception that is the relevant psychological variable.

It is possible that the lack of agreement among the findings of earlier studies of father presence-absence has resulted from the fact that different psychological variables were represented in the operational definitions of father presence-absence. It also is likely that many presumably father-absent children have father substitutes (uncles, older brothers, grandfathers, etc.) that serve the functions of "father" very well. Most studies of this variable have failed to consider the possibility of a substitute and how the substitute affects the dependent variable.

The hypothesis that the lack of male teachers in the schools contributes to the disproportionate number of male underachievers has not been confirmed. The proponents of more male teachers in the classroom have gained no support in this study.

In all fairness to Sexton, one of the strongest advocates of such a remedy, it should be said that she admits that not just any male will do. She has said that strong, vigorous males are hard to find, possibly a result of the system (Sexton, 1970). The present study tentatively concluded that the teachers sampled did not have inappropriate sex role identities as evaluated by colleagues. Apparently these teachers have met standards that would be acceptable to Sexton.

For a long time the manliness of male teachers who teach in the elementary classroom has been questioned. A study by Biedenkapp and Goering (1971) has suggested that this negative view of the elementary school teacher should be reevaluated. They found that on the SVIB and an original test of personality male fifth- and sixth-grade teachers scored as masculine as physical education teachers and almost identical with high school social science teachers.

The present investigator agrees with Hewitt who as long ago as 1931 suggested that good teacher characteristics are individually linked, not sex linked. She also

said that if it is true that women teachers make boys effeminate, we could never find enough virile ones to be teachers. Since most of the males in our country are products of schools where women predominate, it should be true that most of our men are not virile. Sexton would agree, but a look around and public opinion would suggest otherwise.

It also may be that the nature of masculinity or what is considered appropriate sex role identity for males could be changing. That is men may be considered acceptably masculine without exhibiting the "virile" characteristics which Sexton described. There is no reason to believe that society will deteriorate if boys do not develop in the image of virility. Perhaps this change in the characteristics of masculinity is in spite of female teachers, not because of them.

Ryans (1960) in his study of the characteristics of teachers was able to identify very few characteristics of elementary school teachers that differed between the sexes. There is no reason to suppose that male teachers are innately endowed with the capability to teach boys better than are female teachers. This investigator proposes that both sex teachers need teacher training in understanding the individual child of both sexes. They need to learn the best methods for helping boys as well as girls to learn, even if the methods differ by subject

matter, sex of child, and individual child. There is no reason to expect that both sex teachers can not be equally prepared to teach both sex children.

The urge for the inclusion of more male teachers in the classroom is partly related to the hypothesis that if the boy can have a teacher in the classroom with which he can identify, an appropriate sex role identity is fostered and, in turn, his academic achievement is expected to be high.

The father-child relationship develops over a long period of time and so does a child's sex role identity as a result of this relationship. Perhaps it is too much to expect for one male teacher to provide the appropriate reinforcements for each child in the room. Each child has experienced different degrees of father presence and has had a different history of reinforcement for sex role behavior. Each has had a varying number of other father substitutes. Are the conditions present during the short school day in even the most ideal classroom for the male teacher to serve as the primary reinforcer of appropriate sex role identity?

The introduction to this research began by reporting that there are two reasons generally cited for the disproportionate number of boys' academic problems in the elementary years. No evidence has been found in this study to support one of the reasons, lack of males in the

elementary classroom, or feminization of the schools. It is proposed that a second reason which has not been the subject of this research be investigated more fully.

Bentzen (1963) reported evidence that at six years, girls are 12 months ahead of boys developmentally and at nine years, 18 months. There are pressures on boys to achieve at the same rate as girls of equal age, but apparently they lack such capability developmentally. Too much stress and anxiety interferes with the learning process. It is perhaps these developmental differences and failure of teachers to regard them, rather than sex of teacher, and lack of male authority in school and/or at home that has contributed to boys' inordinate number of academic problems in school.

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APPENDIX A
Letter to Superintendents

STATE OF ILLINOIS
DEPARTMENT OF MENTAL HEALTH

Albert J. Glass, M.D., Director



INSTITUTE FOR JUVENILE RESEARCH
RESEARCH HEADQUARTERS
1140 South Paulina Street
CHICAGO, ILLINOIS 60612
341-6365

Refer to: _____

Dear

This letter is to introduce you to a research proposal. As you know, there has been an emphasis lately on getting more male teachers into the elementary classroom. It is presumed that they will provide better models and learning environments for boys. The research I will describe is geared toward determining whether or not this emphasis is a reasonable one.

First, let me introduce myself. I am a Ph.D. candidate in educational psychology at Northwestern University. My adviser there is Dr. B. Claude Mathis who will supervise my research. For the past seven years I have been a research associate at the Institute for Juvenile Research where I conducted and published research concerning normal sex role identity.

The major objective of the proposed research is to determine the differential effects of male and female teachers upon academic achievement of elementary boys and girls. It is proposed to determine if the effects are different depending upon the extent of father presence.

The design of the study calls for collecting data on boys and girls, half of whom had male teachers and half of whom had female teachers during the 1969-1970 school year. School records will be used to obtain achievement data. In addition I would want to send a brief questionnaire to parents to determine the extent of father presence during that year. The children selected to participate in the study will be asked to make some ratings that will take five minutes at most.

Because it is rare to find male teachers in the elementary grades, I am contacting a number of school districts with the expectation of perhaps finding only one male teacher per district.

I would like to provide you with more details of the study. Thus within the week I will call you to determine if I might meet with you to discuss the proposed research with the aim of gaining permission to collect data in school under your superintendency.

Sincerely,

A handwritten signature in cursive script that reads "Karen Vroegh".

Karen Vroegh (Mrs.)

APPENDIX B
Father Activity Inventory

FATHER ACTIVITY INVENTORY

It is asked that mother complete this inventory, but if that is not possible, it may be completed by father or another member of the family. Please answer all of the questions as best as you can. If you would like to clarify one of your answers, please do so on the reverse side. There are no right or wrong answers.

The questions in this inventory refer to the father-child relationship (child whose name appears at the top of the page) as it existed during the school year 1969-70. Since June, 1970, father may no longer be residing in the home for some reason. However, in this inventory, please think about the father-child relationship as it existed in 1969-70.

All of your answers are strictly confidential. No one at your child's school will have access to any individual information supplied. All inventories are coded so that only numbers are being worked with, no children's names.

1. Was there a father in your home during six months or more during the 1969-70 school year? Father is defined as any man who lived in your home and was a father to the child named above. Please check one of the following:

☐ YES

☐ NO

- a. If YES above, please check one of the following:

☐ Biological or adopted father

☐ Stepfather

☐ Grandfather, uncle, or other

- b. Please continue answering questions 2a. through 10.

- a. If NO above, please check one of the following:

☐ Due to separation or divorce

☐ Due to death

☐ Due to illness, business, military, travel

- b. How old was the child named above when separation, divorce, or death occurred?
☐ years ☐ months

- c. If NO above due to death, illness, business, military, or travel, please skip to question 7, answering it and the remaining questions.

If NO above due to separation or divorce, please continue answering questions 2b. through 10.

- 2a. If YES above, please check one of the following that most nearly describes the amount of time father spent on an average day playing with, talking with, or just being with the child named above during the 1969-70 school year.

☐ 0 hrs. ☐ 15 min. ☐ $\frac{1}{2}$ hr. ☐ 1 hr. ☐ 2 hrs. ☐ 3 hrs. (or more)

- 2b. If NO above, please check one of the following that most nearly describes the amount of time father spent in an average week playing with, talking with, or just being with the child named above during the 1969-70 school year.

☐ 0 hrs. ☐ 1 to 5 hrs. ☐ 5 to 10 hrs. ☐ 10 hrs. or more.

3. How would you best describe the father-child relationship? Please check one.

☐ very close ☐ close ☐ somewhat close ☐ not so close

4. How many times a week did father and child usually eat meals together? Please check one of the following:

☐ 0 times ☐ 1 to 5 times ☐ 6 to 15 times ☐ 16 times or more

5. Please indicate the extent of father absence from home due to the following reasons during the 1969-70 school year:

	1 time per week or less	2 times per week	3 times per week or more
Business (traveling, overtime, second job)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sports participation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social occasions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Below are listed several activities and interests which father and son, or father and daughter, might share or spend time together doing. Please check those activities or interests which father and the child named above shared or did together during the 1969-70 school year.

<input type="checkbox"/> puzzles	<input type="checkbox"/> running errands
<input type="checkbox"/> visiting museums	<input type="checkbox"/> just sitting around
<input type="checkbox"/> conversations	<input type="checkbox"/> scouting
<input type="checkbox"/> participating in sports	<input type="checkbox"/> attending sports events
<input type="checkbox"/> wrestling	<input type="checkbox"/> shopping
<input type="checkbox"/> working at hobbies	<input type="checkbox"/> camping
<input type="checkbox"/> doing yard work	<input type="checkbox"/> bike riding
<input type="checkbox"/> flying kites	<input type="checkbox"/> going to exhibitions
<input type="checkbox"/> homework for child's school	<input type="checkbox"/> walking, hiking
<input type="checkbox"/> reading	<input type="checkbox"/> going to library
<input type="checkbox"/> visiting friends and/or relatives	<input type="checkbox"/> zoo trips
<input type="checkbox"/> arguing	<input type="checkbox"/> playing cards or other games
<input type="checkbox"/> doing household repairs	<input type="checkbox"/> car riding
<input type="checkbox"/> attending religious services	<input type="checkbox"/> ball tossing
<input type="checkbox"/> watching TV	<input type="checkbox"/> "chauffering"
<input type="checkbox"/> going to father's place of employment	<input type="checkbox"/> other _____
	please list or describe

Now please number the five (5) activities and interests in which father and child spent the most time together, giving 1 to the one which occupied most of their time, 2 to the one that occupied the next most time, and so on to 5.

7. Father's Occupation (Please be specific, such as accountant, machinist, doctor, sales clerk, army officer, etc.): _____

8. Birth date and sex of child who is subject of this inventory:

_____ month _____ day _____ year _____ male _____ female

9. Are there other children in the family? _____ yes _____ no

If yes, please list them by sex and birth date:

<u>Sex</u>	<u>Birth Date</u>	<u>Living at Home?</u>
		Yes No

10. Inventory completed by (check one): _____ Mother _____ Child
 _____ Father _____ Other

APPENDIX C

Letter of Introduction to Parents

STATE OF ILLINOIS
DEPARTMENT OF MENTAL HEALTH

Albert J. Glass, M. D., Director



INSTITUTE FOR JUVENILE RESEARCH
RESEARCH HEADQUARTERS
1140 South Paulina Street
CHICAGO, ILLINOIS 60612
341-6365

Refer to: _____

October, 1971

Dear Parent or Guardian:

The enclosed inventory is part of a research project that has the approval of your school district, Northwestern University Graduate School, and the Illinois Institute for Juvenile Research. It is hoped that you will take a few minutes to answer the inventory in order to help us understand the family today.

Most of our knowledge about the family comes from knowledge about the mother-child relationship. Little is known about father-child relationships. Thus this inventory has been sent to you and several hundred other parents and guardians of children in your school district and other districts in Chicago's suburbs.

All of your answers in the inventory are strictly confidential. The inventory is coded so that no names will be attached to any answers. Your child's first name which appears on the first page will be removed. Our research interests are in general relationships, not those of any particular father and child.

I would appreciate your returning the completed inventory promptly in the enclosed, addressed and stamped envelope. It is believed that your participation in this research is of value toward achieving an understanding of today's family.

Sincerely,

A handwritten signature in cursive script that reads "Karen Vroegh".

Karen Vroegh
Research Scientist

KV:mh

APPENDIX D
Letters from School Districts

205

OAK PARK PUBLIC SCHOOLS

DISTRICT NO. 97

122 FOREST AVENUE, OAK PARK, ILLINOIS 60301

EUCLID 6-4015

October, 1971

Dear Parent:

The Oak Park Elementary Schools cooperate with various scholars in their research and search for new knowledge concerning educational processes and child development. We review with a great deal of care the many requests that we receive, and approve a small number that are in our opinion worthwhile and do not impose a heavy burden on our limited staff or violate what we consider good judgment.

We feel that Mrs. Karen Vroegh's project is worthwhile and have approved her request for carrying out this study in District 97. We urge you to give careful consideration to her request for your participation in this study. We would like to stress that your participation is on an entirely voluntary basis.

We will be glad to answer any questions about this project and we are sure that Mrs. Vroegh would be happy to review any particular aspect in detail.

Sincerely yours,



Robert J. Baldauf
Director
Research and
Special Projects

THOMAS KNAUER
ASSISTANT SUPERINTENDENT - INSTRUCTIONAL PROGRAMS
530 RED OAK LANE
HIGHLAND PARK, ILLINOIS
PHONE 831-4370

BOARD OF EDUCATION

SCHOOL DISTRICT 108
HIGHLAND PARK, ILLINOIS 60035


Dear Parent or Guardian,

We have approved the research project of Mrs. Karen Vroegh who is a doctoral candidate at Northwestern University and a member of the staff at the Institute for Juvenile Research in Chicago. She is interested in studying adult-child relationships, particularly those of the father-child.

Other school districts in the area, namely Evanston, Highwood and Northfield have also agreed to cooperate with Mrs. Vroegh in this project. If you are willing to cooperate with her in this effort, would you please complete the enclosed inventory and return it to Mrs. Vroegh in the self-addressed stamped envelope.

Thank you for your consideration.

Sincerely yours,



Thomas E. Knauer Ed. D.
Assistant Superintendent
Instructional Programs

TEK:pa

SCHOOL DISTRICT



EVANSTON PUBLIC SCHOOLS

1314 RIDGE AVENUE • EVANSTON, ILLINOIS 60201 • (312) 869-2100

Dear Parent or Guardian,

We have approved the research project of Mrs. Karen Vroegh who is a doctoral candidate at Northwestern University and a member of the staff at the Institute for Juvenile Research in Chicago. She is interested in studying adult-child relationships, particularly those of the father-child.

If you are willing to cooperate with her in this effort, would you please complete the enclosed inventory and return it to Mrs. Vroegh in the self-addressed stamped envelope.

Thank you for your consideration.

Sincerely yours,

Ida B. Lalor
Research Coordinator

IBL/eg

APPENDIX E

Example of Request for Participation

District 111
Highwood, Illinois 60040

Dear Parent:

Our school district would like to cooperate with Mrs. Karen Vroegh of the Institute for Juvenile Research on two research projects. One project concerns the effects of male and female teachers on academic achievement. The second one is a survey of parent-child relationships. The first project will make use of school grades and achievement scores obtained as part of the regular school routine. No direct participation on the part of parents or children is required. The second project requires mothers to answer a brief inventory which will be sent by Mrs. Vroegh.

Her interests concern general relationships rather than those of a specific child. Thus all names of children and parents will be coded so that the information provided remains anonymous.

Please return the attached slip to your child's teacher indicating whether or not you are willing to participate in these research projects.

Sincerely,

Ralph Lieber
Superintendent

Tear Off

To: Teacher

From: _____
Signature of Parent

☐ I am willing to participate in the research as described.

☐ I prefer not to participate in the research as described.

APPENDIX F
Follow-up Letters

STATE OF ILLINOIS
DEPARTMENT OF MENTAL HEALTH

Albert J. Glass, M. D., Director



INSTITUTE FOR JUVENILE RESEARCH
RESEARCH HEADQUARTERS
1140 South Paulina Street
CHICAGO, ILLINOIS 60612
341-6365

Refer to: _____

Dear Parent or Guardian:

Last month you were sent an inventory, called Father Activity Inventory, which is part of a research project on today's family. As yet a completed inventory has not been received from you. In case you have misplaced the original copy, or in case the U.S. Mail goofed in returning the inventory you did complete, I am sending you a new copy. It is hoped that you will take a few minutes to answer the questions in the inventory and return it promptly in the enclosed, addressed, and stamped envelope.

As was pointed out earlier, this research has the approval of your school district, Northwestern University Graduate School, and the Institute for Juvenile Research. Also, since that time, the U.S. Office of Education has awarded me a small grant to work on the project.

All of your answers are strictly confidential. Since our research interests are in general relationships, not those of any particular father and child, all answers on the inventory will be coded. Your child's first name which appears on the first page will be removed. I am aware that some of the questions in the inventory might be considered of a private nature. Thus, I am doing everything possible to protect your privacy.

Sincerely,

A handwritten signature in cursive script that reads "Karen Vroegh".

Karen Vroegh
Research Scientist

KV/bc

STATE OF ILLINOIS
DEPARTMENT OF MENTAL HEALTH

Albert J. Glass, M. D., Director



INSTITUTE FOR JUVENILE RESEARCH
RESEARCH HEADQUARTERS
1140 South Paulina Street
CHICAGO, ILLINOIS 60612
341-6365

Refer to: _____

Dear Parent or Guardian:

I am writing you in connection with a research project being conducted by me. Earlier I sent you a Father Activity Inventory, but for probably a number of good reasons the questionnaire has not yet been returned.

The inventory was sent to over 700 parents and the return has been excellent. But we would like to do better. The more inventories that are returned, the more confident we can feel about drawing conclusions about father-child relationships.

Thus I am asking you again to complete the enclosed inventory and return it in the stamped and addressed envelope that is provided. If you do not want to complete the inventory for one reason or another, it would be appreciated if you would return it anyway, unanswered.

You may not have returned the inventory because there was not a father in the home during the 1969-70 school year. If this is the case let me urge you to complete the inventory to the extent possible anyway. A number of families in the sample are in the same situation and we are interested in obtaining responses from them, too.

May I remind you that all names and answers are coded so that the information you provide remains confidential. We are interested in father-child relationships in general, not those of any particular father and child. You were sent this inventory because your child happened to be in the classroom of one of ten teachers whose students were selected for study.

Sincerely,

Karen Vroegh

(Mrs.) Karen Vroegh
Research Scientist

KV/bc

APPENDIX G
Sex Role Identity Rating Scale

Awards and Honors

Teaching Assistantships (Northwestern University);
Financial Scholarships (Hollins College); Pi Lambda
Theta; Psi Chi; National Honor Society.

Publications and Papers Read

- Calvin, A., & Dollenmayer, R. S. Subliminal perception: Some negative findings. Journal of Applied Psychology, 1958, 43, 187-188. Reprinted in H. W. Karn & B. von Haller Gilmer (Eds.), Readings in industrial psychology. (2nd ed.) New York: McGraw Hill, 1962. Pp. 475-478.
- Jenkin, N., & Vroegh, K. Contemporary concepts of masculinity and femininity. Psychological Reports, 1969, 25, 679-697.
- Vroegh, K. Masculinity and femininity as perceived by Hawaiians. Perceptual and Motor Skills, 1972, in press.
- Vroegh, K. Masculinity and femininity in the elementary and junior high school years. Developmental Psychology, 1971, 4, 254-261.
- Vroegh, K. Masculinity and femininity in the preschool years. Child Development, 1968, 39, 1253-1257.
- Vroegh, K. The relationship of birth order and sex of siblings to gender role identity. Developmental Psychology, 1971, 3, 407-411.
- Vroegh, K. Lack of sex-role differentiation in pre-schoolers' figure drawings. Journal of Projective Techniques and Personality Assessment, 1970, 34, 38-40.
- Vroegh, K., & Handrich, M. The validity of the Howard Maze Test as a measure of stimulus-seeking in preschool children. Educational and Psychological Measurement, Validities Studies Section, 1969, 29, 495-502.
- Vroegh, K., Jenkin, N., Black, M., & Handrich, M. Discriminant analyses of preschool masculinity and femininity. Multivariate Behavioral Research, 1967, 2, 299-313.

- Wroeght, M., Carlson, M., & Black, M. A new approach to the study of masculinity and femininity. Paper read at the meeting of the American Psychological Association, New York City, August, 1966.
- Wroeght, M. The relationship of academic achievement and gender identity. Paper read at the meeting of the Midwestern Psychological Association, Chicago, May, 1968.
- Wroeght, M. The relationship of birth order and sex of siblings to masculinity and femininity. Paper read at the meeting of the Society for Research in Child Development, Santa Monica, Calif., March, 1969.